

What is claimed is:

1. A propylene homopolymer comprising,
about 97 to about 91 percent by weight of a xylene insoluble fraction; and
about 9 to about 3 percent by weight of a xylene soluble fraction;
said xylene insoluble fraction having a meso run length of less than or equal to 130;
with the proviso that the ratio, r , of the meso run length of the xylene insoluble
fraction to the percent content of the xylene soluble fraction in said polypropylene
homopolymer is 22 or less, as determined by the equation:

$$N_m / \%XS = r$$

where: N_m = meso run length of said xylene insoluble fraction; and

$\%XS$ = the percent content of said xylene soluble fraction in said
polypropylene homopolymer.

2. The propylene homopolymer according to claim 1, wherein:
said xylene insoluble fraction comprises about 96 to about 93 percent by weight of
said propylene homopolymer, and said xylene soluble fraction comprises about 7 to about 4
percent by weight of said propylene homopolymer.
3. The propylene homopolymer according to claim 1, wherein said propylene
homopolymer has a melt flow rate of about 2 to about 4 dg/min.
4. The propylene homopolymer according to claim 1, wherein said propylene
homopolymer contains at least one additive selected from the group consisting of: phenolic
antioxidants, phosphites, phosphonites, hindered amine light stabilizers, hydroxylamines and
acid scavengers.

5. A multilayer biaxially oriented film, comprising:
a core layer, and at least one additional layer,
said core layer consisting essentially of a propylene homopolymer having a xylene insoluble fraction and a xylene soluble fraction;
said xylene insoluble fraction having a meso run length of less than or equal to 130;
with the proviso that the ratio, r , of the meso run length of the xylene insoluble fraction to the percent content of the xylene soluble fraction in said polypropylene homopolymer is 22 or less, as determined by the equation:

$$N_m / \%XS = r$$

- where: N_m = meso run length of said xylene insoluble fraction; and
 $\%XS$ = the percent content of said xylene soluble fraction in said polypropylene homopolymer.

6. The multilayer biaxially oriented film according to claim 5, wherein:
said xylene insoluble fraction comprises about 97 to about 91 percent by weight of said propylene homopolymer, and said xylene soluble fraction comprises about 9 to about 3 percent by weight of said propylene homopolymer.
7. The multilayer biaxially oriented film according to claim 6, wherein said propylene homopolymer has a melt flow rate of about 2 to about 4.
8. The multilayer biaxially oriented film according to claim 5, wherein:

said xylene insoluble fraction comprises about 96 to about 93 percent by weight of said propylene homopolymer, and said xylene soluble fraction comprises about 7 to about 4 percent by weight of said propylene homopolymer.

9. The multilayer biaxially oriented film according to claim 5, wherein said propylene homopolymer contains at least one additive selected from the group consisting of: phenolic antioxidants, phosphites, phosphonites, hindered amine light stabilizers, hydroxyl amines and acid scavengers.

10. A core material for a biaxially oriented film, consisting essentially of, a propylene homopolymer, said propylene homopolymer consisting essentially of, about 97 to about 91 percent by weight of a xylene insoluble fraction; and about 9 to about 3 percent by weight of a xylene soluble fraction; said xylene insoluble fraction having a meso run length of less than or equal to 130; with the proviso that the ratio, r , of the meso run length of the xylene insoluble fraction to the percent content of the xylene soluble fraction in said polypropylene homopolymer is 22 or less, as determined by the equation:

$$N_m / \%XS = r$$

where: N_m = meso run length of said xylene insoluble fraction; and

$\%XS$ = the percent content of said xylene soluble fraction in said polypropylene homopolymer.

11. The core material according to claim 10, wherein:

said xylene insoluble fraction comprises about 96 to about 93 percent by weight of said propylene homopolymer, and said xylene soluble fraction comprises about 7 to about 4 percent by weight of said propylene homopolymer.

12. The core material according to claim 10, wherein, said propylene homopolymer has a melt flow rate of about 2 to about 4.

13. The core material according to claim 10, wherein said propylene homopolymer contains at least one additive selected from the group consisting of: phenolic antioxidants, phosphites, phosphonites, hindered amine light stabilizers, hydroxyl amines and acid scavengers.

14. A method for consistently producing a propylene homopolymer displaying a broad processing window and a wide range of processing temperatures as core material in the manufacture of a biaxially oriented film, said method comprising:

polymerizing propylene in the presence of a polymerization catalyst such that the propylene homopolymer produced comprises about 91 to about 97 percent by weight of a xylene insoluble fraction having a meso run length of 130 or less, and

about 3 to about 9 percent by weight of a xylene soluble fraction, wherein

the ratio, r , of the meso run length of the xylene insoluble fraction to the percent content of the xylene soluble fraction in said polypropylene homopolymer is 22 or less, as determined by the equation:

$$N_m / \%XS = r$$

where: N_m = meso run length of said xylene insoluble fraction; and

%XS = the percent content of said xylene soluble fraction in said propylene homopolymer.

15. The method according to claim 14, wherein said polymerization is controlled such that said propylene homopolymer produced comprises about 93 to about 96 percent by weight of a xylene insoluble fraction having a meso run length of 130 or less.

16. The method according to claim 14, further comprising the step of adding to said propylene homopolymer at least one additive selected from the group consisting of: phenolic antioxidants, phosphites, phosphonites, hindered amine light stabilizers, hydroxyl amines and acid scavengers.

17. A biaxially oriented film, consisting essentially:
of a propylene homopolymer having a xylene insoluble fraction and a xylene soluble fraction;
said xylene insoluble fraction having a meso run length of less than or equal to 130;
with the proviso that the ratio, r , of the meso run length of the xylene insoluble fraction to the percent content of the xylene soluble fraction in said polypropylene homopolymer is 22 or less, as determined by the equation:

$$N_m / \%XS = r$$

where: N_m = meso run length of said xylene insoluble fraction; and

%XS = the percent content of said xylene soluble fraction in said polypropylene homopolymer.

18. The biaxially oriented film according to claim 17, wherein:

said xylene insoluble fraction comprises about 97 to about 91 percent by weight of said propylene homopolymer, and said xylene soluble fraction comprises about 9 to about 3 percent by weight of said propylene homopolymer.

19. The biaxially oriented film according to claim 18, wherein said propylene homopolymer has a melt flow rate of about 2 to about 4.

20. The biaxially oriented film according to claim 17, wherein:

said xylene insoluble fraction comprises about 96 to about 93 percent by weight of said propylene homopolymer, and said xylene soluble fraction comprises about 7 to about 4 percent by weight of said propylene homopolymer.

21. The biaxially oriented film according to claim 17, wherein said propylene homopolymer contains at least one additive selected from the group consisting of: phenolic antioxidants, phosphites, phosphonites, hindered amine light stabilizers, hydroxyl amines and acid scavengers.